

III. AMENDMENTS TO THE CLAIMS

- PLEASE FIND BELOW A MARKED VERSION OF CLAIMS WITH PRESENT STATUS DELINEATED
 - THE CLAIMS ARE HEREIN AMENDED, CANCELED, OR ADDED TO, SO AS TO EVENTUATE IN THE NEW SET OF PENDING CLAIMS INDICATED BELOW. THIS LISTING OF CLAIMS WILL REPLACE ALL PRIOR VERSIONS AND LISTING OF CLAIMS IN THE APPLICATION.

-- The status of each claim is indicated after the claim number by use of a parenthetical identifier selected from: (Original), (Currently amended), (Canceled), (Withdrawn), (Withdrawn – currently amended), (Previously presented), (New), and (Not entered). Claim text is provided for each claim in the listing except for the claim status “canceled” or “not entered.” Only claims having the status of “Currently amended” or “Withdrawn – currently amended” include markings to indicate changes that have been made relative to the immediate prior version of the claims. The text of any deleted matter is shown by strike-through, except that double brackets placed before and after deleted characters of five or fewer consecutive characters may be used. The text of any added subject matter is shown by underlining the added text. Claims that were previously canceled that are reinstated here, if any, are reinstated by adding the claim as a “(New)” claim with a new claim number.

WHAT IS CLAIMED IS:

1. (Canceled)
2. (Currently amended) A deformable bone implant according to claim [[1]] 35, wherein the support ~~structure is comprised of a central~~ core is solid.
3. (Currently amended) A deformable bone implant according to claim [[1]] 35, wherein the support ~~structure~~ core is comprised of a ~~truss-like-structure~~ truss of rods.
4. (Withdrawn) A deformable bone implant according to claim 1, wherein the support structure is comprised of a mesh of fibers or wires arranged to have opens areas within the mesh.
5. (Withdrawn) A deformable bone implant according to claim 1, wherein the support structure is comprised of at least one helical spring element.
6. (Withdrawn) A deformable bone implant according to claim 1, wherein the support structure is formed of at least two types of materials each having a different Young's modulus, and the at least two types of materials are arranged to provide a varying Young's modulus along a longitudinal axis of the support structure.
7. (Withdrawn) A deformable bone implant according to claim 1, wherein the support structure comprises an inflatable portion.
8. (Currently amended) A deformable bone implant according to claim [[1]] 35, wherein ~~the interface portion comprises~~ a plurality of resiliently deformable support elements protrude therefrom. from the interface portion of the implant.

9. (Currently amended) A deformable bone implant according to claim 8, ~~wherein at least a portion of each of the plurality of support elements is resiliently deformable~~further including non-resilient, non-deformable, support elements.

10. (Currently amended) A deformable bone implant according to claim 8, wherein at least one of the plurality of resilient deformable support elements is ~~adapted to fit~~dimensioned to snugly fit within a bone canal.

11. (Currently amended) A deformable bone implant according to claim 8, ~~wherein the plurality of support elements comprises protrusions that resiliently deform and deflect during insertion of the bone implant into a bone canal such that the plurality of support elements exerts a force against a wall of the bone canal and the implant fits snugly within the bone canal~~the support core is not solid.

12. (Currently amended) A deformable bone implant according to claim ~~[[1]]~~ 35, further comprising an adjustable cable operatively associated with said resiliently deformable support elements in a manner permitting adjustment of ~~for adjusting a tension in the resiliently deformable support structure elements~~ to thereby adjust stiffness and/or curvature of the implant.

13. (Currently amended) A deformable bone implant according to claim 12, wherein the adjustable cable is supported above the surface of at least one of said resiliently deformable support elements ~~by at least one bridge element.~~

14. (Currently amended) A deformable bone implant according to claim ~~[[1]]~~ 35, further comprising a plurality of adjustable cables operatively associated with said resiliently deformable support elements in a manner permitting adjustment of ~~for adjusting a tension in~~

the resiliently deformable support structure elements to thereby adjust stiffness and/or curvature of the implant.

15. (Currently amended) A deformable bone implant according to claim 14, wherein the adjustable cables ~~are adjusted to provide an asymmetric or non-uniform level of tension to the plurality of adjustable cables.~~ are tensioned to a different degree from one another.

16. (Currently amended) A deformable bone implant according to claim 14, wherein the adjustable cables are operatively configured with respect to the resiliently deformable structural elements to allow tension in the cables to be adjusted before, during, and/or after implantation of the bone implant.

17. (Currently amended) A deformable bone implant according to claim 14, wherein the implant adjustable cables are adjusted to provide a variable rigidity to the bone implant. has different degrees of rigidity along the implant.

18. (Currently amended) A deformable bone implant according to claim ~~[[1]]~~ 35, wherein the interface portion ~~contains~~ structurally is associated with at least one type of ~~prescribed medication in a manner such that medication can be that is administered enter~~ into a bone canal of the bone.

19. (Currently amended) A deformable bone implant according to claim 18, wherein the interface portion is coated with a ~~material selected from the group consisting essentially of a hydroxyapatite-based substance, a porous bone substance, an inorganic bovine bone substance, an osteoconductive bone graft substitute, and a synthetic bone graft substitute.~~

20. (Currently amended) A deformable bone implant according to claim 19, wherein the interface portion is coated a ~~material contains a~~ with a bone morphogenic protein and/or medication for preventing bone diseases.

21. (Withdrawn) A bone brace, comprising:

a longitudinal sleeve element for encircling at least a portion of an outer circumference of a bone; and

a trough portion attached to the longitudinal sleeve element and facing the bone.

22. (Withdrawn) A bone brace according to claim 21, wherein the trough portion is comprised of a corrugated portion.

23. (Withdrawn) A bone brace according to claim 21, further comprising an adjustable cable for adjusting a tension in the longitudinal sleeve element to thereby adjust stiffness and/or curvature of the bone brace.

24. (Withdrawn) A bone brace according to claim 23, wherein the cable is supported by at least one bridge element.

25. (Withdrawn) A bone brace according to claim 21, further comprising a plurality of adjustable cables for adjusting a tension in the longitudinal sleeve element to thereby adjust stiffness and/or curvature of the bone brace.

26. (Withdrawn) A bone brace according to claim 25, wherein the adjustable cables are adjusted to provide an asymmetric or non-uniform level of tension to the plurality of adjustable cables.

27. (Withdrawn) A bone brace according to claim 25, wherein the adjustable cables are adjusted before, during, and/or after installation of the bone brace.

28. (Withdrawn) A bone brace according to claim 25, wherein the adjustable cables are adjusted to provide a variable rigidity to the bone brace.

29. (Withdrawn) A bone brace according to claim 21, wherein the trough portion is coated with a material selected from the group consisting essentially of a hydroxyapatite-based substance, a porous bone substance, an inorganic bovine bone substance, an osteoconductive bone graft substitute, and a synthetic bone graft substitute.

30. (Withdrawn) A bone brace according to claim 29, wherein the material contains a bone morphogenic protein and/or medication for preventing bone diseases.

31. (Withdrawn) A bone brace according to claim 21, further comprising a woven reinforcement bandage positioned between the brace and the bone, wherein at least a portion of the bandage is molded with the longitudinal sleeve element and/or the trough portion.

32. (Withdrawn) A bone brace according to claim 21, further comprising a liner positioned between the trough portion and the bone.

33. (Withdrawn) A bone brace according to claim 32, wherein the liner is molded with the longitudinal sleeve element and/or the trough element.

34. (Withdrawn) A bone implant, comprising:

a longitudinal sleeve element for at least partially encircling an outer circumference of a bone; and

a plurality of support elements attached to the sleeve element and contacting the bone, wherein

the sleeve element including the plurality of the support elements becomes embedded in newly-generated bone tissue to form a composite bone structure.

35. (Currently amended) A bone implant for insertion into a bone canal, comprising:

an interface portion supported by a support ~~structure~~ core; and

a plurality of resiliently deformable support elements oriented in longitudinal rows along the interface portion and protruding from the interface portion, wherein the plurality of support elements are structurally configured to contact allow for a press fit a wall of a between said implant and the bone canal such that the implant conforms to and fits snugly within the bone canal [[, and]] ;

wherein the plurality of resiliently deformable support elements comprising comprise protrusions that are operatively configured to resiliently deform and deflect during insertion of the implant into the bone canal and to exert force against said bone canal after deflection when said implant is affixed in said bone canal. such that the plurality of support elements exert a force against the wall of the bone canal.

36. (Currently amended) A bone implant according to claim 35, ~~wherein the plurality of support elements comprises longitudinal support members contacting the wall of the bone canal over substantially continuous portions of the support members. wherein said implant is coated at least in part about a surface of the implant with a bone growth promoting agent.~~

37. (Canceled)

38. (Withdrawn) A bone implant according to claim 35, further comprising at least one elongated tension member attached to the interface portion, wherein the at least one tension member becomes embedded in newly generated bone tissue and/or bonded to the wall of the bone canal to form a composite bone structure.

39. (Withdrawn) A bone implant according to claim 35, wherein each support element comprises a trough-like element which contacts the wall of the bone canal to serve as a catalyst for bone tissue growth.

40. (Withdrawn) A bone implant according to claim 39, wherein the trough-like element comprises a plurality of fingers for engaging the wall of the bone canal.

41. (Withdrawn) A bone implant according to claim 38, wherein at least a portion of the elongated tension member is surrounded with a loosely woven mesh of fibers and/or whisker reinforcement elements.

42. (Withdrawn) A bone implant according to claim 41, wherein the elongated tension member, the woven mesh, and/or the whisker reinforcement elements are coated with at least one material selected from the group consisting essentially of a hydroxyapatite-based substance, a porous bone substance, an inorganic bovine bone substance, an osteoconductive bone graft substitute, a synthetic bone graft substitute, bone morphogenic protein, and medication for preventing bone diseases.

43. (Withdrawn) A bone implant according to claim 38, wherein the elongated tension member is supported by at least one bridge element attached to the interface portion.

44. (Withdrawn) A bone implant according to claim 38, wherein the elongated tension member is attached to the interface portion with an adhesive.

45. (Withdrawn) A bone implant according to claim 35, further comprising a woven sleeve element surrounding the plurality of support elements.

46. (Withdrawn) A bone implant according to claim 45, wherein the woven sleeve element comprises an elongated tension member.

47. (Withdrawn) A bone implant according to claim 45, further comprising a lining interposed between the woven sleeve element and the support elements for flexibly pressing the woven sleeve element against the wall of the bone canal.

48. (Withdrawn) A bone implant according to claim 47, wherein the woven sleeve element and/or the lining extends beyond an end of the support structure to interface the wall of the bone canal.

49. (Canceled)

50. (Withdrawn) A bone implant according to claim 35, wherein the support structure is comprised of a mesh of fibers or wires arranged to have open areas within the mesh.

51. (Withdrawn) A bone implant according to claim 35, wherein the support structure is comprised of at least one helical spring element.

52. (Withdrawn) A bone implant according to claim 35, wherein the support structure is formed of at least two types of materials each having a different Young's

modulus, and the at least two types of materials are arranged to provide a varying Young's modulus along a longitudinal axis of the support structure.

53. (Withdrawn) A bone cement for a bone implant, the bone cement comprising:

a cement material; and

whisker reinforcement elements mixed with the cement material, wherein

the whisker reinforcement elements are comprised of metal or non-metal fibers.

54. (Withdrawn) An intramedullary implant, comprising a nail formed of a drillable material.

55. (Withdrawn) An intramedullary implant according to claim 54, wherein the nail has pre-drilled holes and further comprising plastic portions within the pre-drilled holes.

56. (Withdrawn) An intramedullary implant according to claim 55, wherein the plastic portions have openings therein.

57. (New) A deformable bone implant comprising:

an interface portion supported by a support core;

an adjustable cable operatively configured to adjust the tension in the support core to thereby adjust stiffness and/or curvature of the implant.

58. (New) A deformable bone implant according to claim 57, wherein there exist a plurality of adjustable cables.

59. (New) A deformable bone implant according to claim 58, wherein each cable is tensioned to a different degree than the other.

60. (New) A deformable bone implant according to claim 58, and operatively configured to be adjustable before, during, and after implantation of the bone implant.

61. (New) A deformable bone implant according to claim 58, wherein the tension in the adjustable cables is adjusted to provide for a variable rigidity to the bone implant.